UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,816	10/11/2005	Raf Lodewijk Jan Roovers	NL 030433	5559

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EXAMINER
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ART UNIT	PAPER NUMBER
2611	

NOTIFICATION DATE	DELIVERY MODE
02/03/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>29 October 2010</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1,4-7,9-13 and 15-25</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1,4-7,9-13 and 15-25</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____ .

DETAILED ACTION

1.   This communication is in response to the Amendment to Application 10/552,816

filed 10/29/10.

Response to Arguments

2.   Applicant's arguments, see page 9 - 10, filed 10/29/10, with respect to the

rejection(s) of claim(s) 1, 4 - 6, 7, 9 -12, 13, 16 – 25 under 103 have been fully

considered and are persuasive. Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made in view of

Fullerton et al. (US 5,677,927).

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1, 4 - 6, 7, 9 -12, 13, 16 – 25 rejected under 35 U.S.C. 103(a) as being

unpatentable over Fullerton (US 5677927) in further view of Yang et al. (US

2004/0141567) .

Regarding claim 1, A communications receiver, comprising a pulse detection for

detecting unit configured to detect pulses in a received signal, the pulse detection unit

comprising:

Comparator (**A comparator then turns those voltages into logical equivalents of 1's and 0's. It is necessary to supply a pulse for both 1's and 0's because, in the absence of a pulse, noise at the threshold of the comparator would produce a random output, col 19, line 58 - 61**);

a signal processor (**microprocessor**);

a sampling time generator configured to generate timing signals indicative of a plurality of sampling time points within a received pulse (**Fig. 14 and Fig. 24, sample and hold and the integrator, generates the timing signals as shown in Fig. 16A-C**); and

a reference level generator configured to generate a plurality of reference levels, wherein each of the comparators is programmable with a sampling time point selected from said plurality of sampling time points and with a reference level selected from said plurality of reference levels (**Fig. 14 and Fig. 24, sample and hold and the integrator, generates the timing signals as shown in Fig. 16A-C, the voltage or threshold of the reference**), and

wherein the received signal is applied to each of the comparators such that each of the comparators is configured to produce a respective output signal based on a comparison between the received signal level and the selected reference level at the selected sampling time point, and wherein the signal processor is configured to detect pulses in the received signal based on the output signals from the comparators and adapted to program the comparators with respective selected sampling time points and reference levels, in order to detect said pulses (**the cross correlator and the decode**

timing modulator than compares received signal or data to the selected or the

computed by the sample and hold and waveforms shown in Fig. 16A-C, based on

that the output is provided). However does not specifically disclose multiple

comparators.

Yang teaches multiple comparators (**voltage comparator, Fig. 6**)

It would have been obvious to one of the ordinary skilled in the art at the time the

invention was made to combine the teachings of Fullerton with Yang. One would be

motivated to combine these teachings because the multiple comparators needed for

multiple received signals.

Regarding claim 4, Fullerton with Yang teaches the communications receiver as

claimed in claim 1,

Fullterton further comprising a pre-amplifier configured to pre-amplify the

received signal to an appropriate level for comparison with the plurality of reference

levels (**RF amplifier, Fig. 24**).

Regarding claim 5, Fullerton with Yang teaches the communications receiver as

claimed in claim 1,

Fullterton further teaches wherein the reference level generator is adapted to

scale the generated plurality of reference levels for comparison with the received signal

(The integrator is essentially a low-pass filter of first order, which is adapted to respond on a time scale similar to the width of the monocycle (i.e., 157 ps))

Regarding claim 6, Fullerton with Yang teaches the communications receiver as claimed in claim 1,

Fullterton further teaches a current reference configured to drive bias current to said plurality of comparators (**as shown at steps 2802 and 2804, respectively, the microprocessor 2406 applies bias to the VCO 2440 (as shown at a step 2806) to cause the lock loop 1429 to drift at a programmed rate faster (or slower) than the remote transmitter's transmit period, as shown at a step 2808**).

Regarding claim 7, the method has substantially same limitations as claim 1, thus the same rejection is applicable.

Regarding claim 9, the method has substantially same limitations as claim 3, thus the same rejection is applicable.

Regarding claim 10, the method has substantially same limitations as claim 5, thus the

same rejection is applicable.

Regarding claim 11, Fullerton with Yang teaches the communications receiver as

claimed in claim 1,

Fullerton further teaches programming the comparators with respective selected

sampling time points and reference levels, based about the possible shapes of said

pulses (**as shown in Fig. 1s and 15 , the received signal is compared with the**

known pulse).

Regarding claim 12, Regarding claim 11, Fullerton with Yang teaches the

communications receiver as claimed in claim 1,

Fullerton further teaches Fullerton further teaches programming the comparators

with respective selected sampling time points and reference levels, based about the

possible shapes of said pulses based on knowledge about the expected arrival times of

said pulses (**A control loop comprising the lowpass filter is used to generate an**

error signal to provide minor phase adjustments to the adjustable time base to

time position the periodic timing signal in relation to the position of the received

signal).

Regarding claim 13, the method has substantially same limitations as claim 1, thus the

same rejection is applicable.

Regarding claim 16, the method has substantially same limitations as claim 4, thus the

same rejection is applicable.

Regarding claim 17, the method has substantially same limitations as claim 5, thus the

same rejection is applicable.

Regarding claim 18, the method has substantially same limitations as claim 6, thus the

same rejection is applicable.

Regarding claim 19, Fullerton with Yang teaches the communications receiver as

claimed in claim 1,

     Fullerton further teaches wherein the pulse detector is adapted for use in an ultra

wide band communication receiver (**UWB receiver, Abstract**)

Regarding claim 20, Fullerton with Yang teaches the communications receiver as

claimed in claim 1,

Fullerton further teaches at least on antenna (**shown in receiver Fig. 14 and**

24),

receive circuitry configured to perform initial radio frequency processing of the

received signal (**RF amplifier, Fig. 24**).

Regarding claim 21, Fullerton with Yang teaches the communications receiver as

claimed in claim 1,

wherein a number of the plurality of comparators is based on a modulation

scheme of the received signals (**Alternatively, the coded timing signal can be**

summed or mixed with the modulated subcarrier(s) and the resultant signal is

used to time modulate the periodic timing signal, Abstract).

Regarding claim 22, Fullerton with Yang teaches the communications receiver as

claimed in claim 1,

Fullerton further teaches wherein at least two comparators are configured to

provide information about at least one of:

a pulse shape of the received signal (**pulse shape, Fig. 15**); and

an amplitude of the received signal (**voltage of the signal Fig. 16**).

Regarding claim 23, the method has substantially same limitations as claim 22, thus the same rejection is applicable.

Regarding claim 24, the method has substantially same limitations as claim 21, thus the same rejection is applicable.

Regarding claim 25, the method has substantially same limitations as claim 22, thus the same rejection is applicable.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TANMAY K. SHAH whose telephone number is (571)270-3624. The examiner can normally be reached on Mon-Thu (7:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TANMAY K SHAH/
Examiner, Art Unit 2611

/David C. Payne/
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